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N^o. XI.

A Memoir concerning the Fascinating Faculty which has been ascribed to the Rattle-Snake, and other American Serpents. By BENJAMIN SMITH BARTON, M. D.*

FIDEM NON ABSTULIT ERROR.

Read April
4, 1794.

NATURALISTS have not always been philosophers. The slight and superficial manner in which they have examined many of the subjects of their science; the credulity which has accompanied them in their researches after truth, and the precipitancy with which they have decided upon many questions of importance, are proofs of this assertion.

There is a question in natural history that has, in an especial manner, solicited from me these observations. I mean the question concerning the FASCINATING FACULTY, which has been ascribed to different kinds of American serpents. It is my intention to examine this question, in the memoir which I now present to the Philosophical Society.

Of this fascinating faculty we have all heard and read. In many of our country situations, there is hardly a man or a woman, who will not, when the subject comes to

* Since this memoir was read before the Society, it has been considerably altered, and somewhat enlarged. I hope, the alterations will render it more worthy of the notice of those who, like myself, derive pleasure and happiness from the contemplation of the works and operations of nature, on this globe.

I fear, I shall be thought to have treated the question in too diffusive a manner. I have not, indeed, laboured to be concise. But if the memoir is more extensive than was necessary, I flatter myself, it will be admitted that it, at least, contains some new and interesting facts. I submit it to its fate.

be mentioned, seriously relate some wonderful story, as a convincing proof of the doctrine. Children seem taught to believe it. I think, it is sometimes one of the earliest prejudices imprinted on their tender minds. It is a prejudice which often increases with their years ; and even in that happy period of life when the mind is most firm, and the least propense to the belief of extraordinary things, the ways of which we are not capable of scanning, I have known this prejudice so deeply and so powerfully rooted, as to mock the light and sureness of facts, and all the strength of reasoning.

It is not my intention, in this memoir, to give an analysis, or complete view, of every thing that has been written on the subject. Nor is it my intention to examine the many stories, related by authors, in support of the fascinating faculty of serpents. For the first task, I have not leisure ; and, as to the second, I should think my time ill employed in pointing out the gross absurdities which seem to constitute a necessary part of many of those stories. I think it proper, however, to observe, that I have anxiously sought for, and have patiently perused, the volumes of tales published in favour of the doctrine which I mean to controvert.

I aim at giving a general, though correct, view of the question, uninfluenced by the bold assertions of ignorance, or by the plausible conjectures of science. In the investigation of the question, I have sought for facts : these have been my guides. I have studiously endeavoured to follow where they seemed to lead. Perhaps, they have led me astray.

The manner in which the supposed fascinating power of serpents is exerted has often been related, by different writers. I shall endeavour to convey some idea of the business, in as few words as I can.

The snake, whatever its species may be, lying at the bottom of the tree or bush upon which the bird or squirrel sits, fixes its eyes upon the animal which it designs to fascinate, or enchant. No sooner is this done than the unhappy animal (I use, for the present, the language of those who differ from me in opinion, on this subject) is unable to make its escape. It now begins to utter a most piteous cry, which is well known by those who hear it, and understand the whole machinery of the business, to be the cry of a creature enchanted. If it is a squirrel, it runs up the tree for a short distance, comes down again, then runs up, and, lastly, comes lower down. "On that occasion," says an honest but rather credulous writer *, "it has been observed, that the squirrel always goes down more than it goes up. The snake still continues at the root of the tree, with its eyes fixed on the squirrel, with which its attention is so entirely taken up, that a person accidentally approaching, may make a considerable noise, without the snake's so much as turning about. The squirrel as before mentioned comes always lower, and at last leaps down to the snake, whose mouth is already wide open for its reception. The poor little animal then with a piteous cry runs into the snake's jaws, and is swallowed at once, if it be not too big; but if its size will not allow it to be swallowed at once, the snake licks it several times with its tongue, and smoothes it, and by that means makes it fit for swallowing †."

It would be easy to cite, from different authors, other accounts of the manner in which the enchantment is per-

* Professor Peter Kalm.

† Travels into North-America; containing its natural history, and a circumstantial account of its plantations and agriculture in general, &c. &c. vol. i. p. 317 & 318. Also vol. ii. p. 207, 208, 209 & 210. English Translation. London: 1770 & 1771.

formed; or, more properly speaking, of the conduct, or behaviour, of the enchanting and enchanted animals. But between these accounts, there is hardly a specific difference. There is considerable unity in all the relations that I have heard, or read. However, those who wish to examine this part of the subject more fully, will, at least, receive some degree of entertainment from the perusal of the many authors who have believed and asserted, that serpents possess a power of fascinating other animals.

That the belief in the existence of this power should have been so general among the uninformed part of a people, ought not to be wondered at. The human mind, unenlightened by science, or by considerable reflection, is a soil rich in the weeds of superstition, and credulity. It is ever prone to believe in the wonderful, even when this belief, as is often the case, brings with it fears, and cares, and misery. The bondage of the mind in superstitious credulity is great and heavy. Neither religion nor virtue can give it its freedom. This it obtains from science. How important, then, even in this point of view, is the enlargement of the mind by science!

But it is, surely, a matter of some astonishment, that this belief should have been admitted, in all the fulness of its extravagance, by men of learning, of observation, and of genius: by those who have the book of nature in their hands; that book which will, in some future and some happier age, eradicate many of the prejudices which disfigure, and which mock the dignity of, human nature: by classical scholars, grown old in the disbelief of similar fables, heightened and embellished by the charms of poetry; and also by the infidel, who denies the authenticity of scripture-miracles, few of which, even though they were not shown to be truths, are more improbable than the imaginary fact which I am examining.

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I have sought to discover the original, or source, of this belief. I do not find any traces of it among the ancient writers of either Greece or Rome. I think, it is most likely that no such traces can be found. Lucan, had serpents been thought to possess a fascinating faculty in his age, and in the country in which he lived, would, probably, have availed himself of its existence, in his beautiful account of the march of Cato's army through the Libyan-Desert*; and had such a notion prevailed in the earlier days of Lucretius, would we not find some mention made of it in the poem *De Rerum Natura*, one of the finest and most varied productions of the human mind? Classical scholars may possibly, however, discover the dawn of this notion in Greek and Roman authors, unread by me. On this subject, I have not pushed my inquiries as far as I wished to have done. It is not unlikely that I may examine the question, more curiously, at some future period.

It is probable that in the mythology of Asia and of Africa, we shall discover some traces of this notion, so intimately connected with the superstitious credulity of a people, and even so naturally arising out of an imperfect view of the manners of serpents.

If we may believe the Reverend Dr. Cotton Mather†, Mr. Dudley‡, and other persons, who had resided in North-America, we are to look for the beginning of this ridiculous notion among our Indians. How far, however, this is really the case may, I think, be doubted. It is certain that, at present, the opinion is by no means universal among the Indians. Several intelligent gentlemen, who are well acquainted with the manners, with

* *Pharsalia*, lib. IX.

† *The Philosophical Transactions*, abridged, vol. v. part ii. no. 339. p. 162.

‡ *Ibid.* vol. vi. part iii. no. 376. p. 45.

the religious opinions, and with the innumerable superstitious prejudices of the Indians, have informed me, that they do not think these people believe in the notion in question. My friend Mr. John Heckewelder, of Bethlehem, writes to me, that he does not recollect to have heard the Indians say that snakes charm birds; though he has frequently heard them speak of the ingenuity of these reptiles in catching birds, squirrels, &c. Mr William Bartram says, that he never understood that the nations of Indians among whom he travelled had any idea of the fascinating power of snakes*. On the other hand, however, a Mohegan-Indian told me that the Indians are of opinion that the rattle-snake can charm, or bewitch, squirrels and birds, and that it does this with its rattle, which it shakes, thereby inviting the animals to descend from the trees, after which they are easily caught. According to this Indian, his countrymen do not think that the snake, in any manner, accomplishes the business with its eyes. A Choktah-Indian assured me that the rattle-snake does charm birds, &c. but he was honest enough to confess that he did not know in what manner it does it. The interpreter, through whom I conversed with this Indian, said that the snake charms by means of its rattle.

The veneration, or regard, which has been paid to the rattle-snake by certain North-American tribes seems, at first sight, to favour the opinion, that these tribes attributed to this hideous reptile some hidden power †, perhaps that of fascinating animals. Mr. William Bartram informs me, that the southern Indians, with whom he is acquainted, seem to hold the rattle-snake in a degree of veneration ‡. Mr. Heckewelder says that, to his cer-

* MS. note, communicated to me by this ingenious gentleman.

† Vis abdita. Lucretius.

‡ MS. note communicated to me.

tain knowledge, this reptile was once held in particular esteem by the Delawares. He was several times prevented, by these Indians, from killing the rattle-snake, being told that it was their grand-father, and, therefore, must not be hurt. At other times, he was told, he must not kill this snake, because the whole race of rattle-snakes would grow angry, and give orders to bite every Indian that might come in their way *. But, of late, especially among those Indians who have had connection with the whites, these ridiculous notions have mouldered away, and our Indians, at present, kill their rattling "grand-father" with as little ceremony as the Eskimaux are said to kill their parents in old-age.

It is obvious, from contemplating the manners and the history of nations, that a part of their religions, and a large part of the fabrick of their superstitious notions, have arisen out of fear. Perhaps, all mankind † admit the existence of two great beings, the one good and all-benevolent, the other bad and studious of evil. In our own continent, where, I believe, this notion was universal, certain tribes were assiduous in their adoration of the latter being, whilst the former, whom the light of reason taught them to consider as the source of life, and all their

* In my *Historical and Philosophical Inquiry* (not yet published), I have collected many facts which seem incontestably to prove, that the mythology, or superstitious religion, of the Americans is a fragment of that mythology whose range in Asia, and in Africa, has been so extensive. Possibly, the veneration, or regard, which was paid to different kinds of serpents in America did not originate in this continent, but had its source in Asia, from which portion of the globe (after a long and laborious attention to the subject) I cannot doubt, that almost all the nations of America are derived. It is unnecessary, in this place, to cite instances of the religious veneration which was, and still is, paid to some species of serpents, in various parts of the old-world. These instances must be familiar to every person, who is acquainted with the historians or with the poets of antiquity, and with the history of the Gentoo-Indians.

† I speak of mankind in the aggregate, and not of individuals among them.

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bleffings, was merely acknowledged and named, but unworshipped and neglected *. The Delawares, and some other nations who speak dialects of their language, believe that a turtle, of an enormous size, inhabits the deep, and supports upon his back this continent, or, as they call it, island. They say it is in the power of this animal, by diving, to drown the world, as he has already done, in former ages. They, therefore, endeavour to conciliate his friendship and good-will. With this view, they make rattles of the turtle-shell, into which they put small stones, beans, or Indian-corn †, and play with this instrument, at their dances. The turtle is greatly esteemed by them; and, in the fulness of a mixed zeal and fear, they even deign to call him *Mannitto*, or God; because, they say, he can live both upon the land and in the water ‡.

It seems very probable to me, that the veneration for the rattle-snake had its birth in fear, and not in the belief that this reptile possessed the power of fascinating animals. If, as some writers have asserted, the Indians were in possession of absolute specifics for the bite of the rattle-snake, I am of opinion that the veneration for this animal would not have existed; or, at least, that it would not long have continued. But the Indians are often unable to prevent or to cure the effects of the active poison of this serpent, which not unfrequently destroys them §.

* John De Laet, speaking of the Indians of New-York, has the following words: "Cæterum nullus ipsis religionis sensus, nulla Dei veneratio: diabolum quidem colunt sed non tam solemniter neque certis ceremoniis, ut Africani faciunt," &c. *Novus Orbis seu Descriptionis Indiæ Occidentalis Libri xviii. lib. iii. cap. xi. p. 75. Lugd. Batav. 1633.*

† Maize.

‡ MS. by Mr. John Heckewelder, *penes me.*

§ Adair says, he does "not remember to have seen or heard of an Indian dying by the bite of a snake, when out at war, or a hunting; although they are then often bitten by the most dangerous snakes." *The History of the American Indians, &c. p. 235. London: 1775.* It is certain, from the testimony

I return to the more immediate path of my subject.

Among the Indians of South-America, I do not find any traces of the notion that serpents can fascinate other animals. Pifo, the author of the *Natural and Medical History of the two Indies*, seems to have been studious to bring together the extraordinary things which have been related of the rattle-snake. But he says not a syllable concerning the fascinating faculty of this reptile*.

But whatever may have been the native country of the notion which I am considering, it would have been well had it been confined to savages. It is a tale which seems nicely adapted to the wit and society of rude and uncultivated nations. Unfortunately, the progress of error and of credulity is extremely rapid. Their dominion is extensive. The belief in the fascinating faculty of serpents has spread through almost all the civilized parts of North-America. Nor is it confined to America. It has made its way into Europe, and has there taken possession of the minds of scholars, of naturalists, and of philosophers.

testimony of many persons, that the bite of the rattle-snake has often proved mortal to the Indians, and others, notwithstanding the boasted specifics of these people. Father Cajetan Cattaneo says, many Indians die with the bite of serpents. "But," observes the father, "it is said they commonly escape with life, when they can quickly apply the remedy which providence has prepared of certain herbs, especially the spikenard, which some parts of *Paraguay* produce in plenty. But when they are bit by the rattle-snake it is confidently assured that the case admits no cure." *The third letter of F. Cajetan Cattaneo. See A Relation of the missions of Paraguay, wrote originally in Italian, by Mr. Muratori. English Translation. p. 26c. London: 1759.* Father Cattaneo is here speaking of the South-American rattle-snake, the poison of which, I have little doubt, is more deleterious than that of the same animal in our part of North-America. Still, however, I am confident, that this poison, even in the most fervid climates, is not always mortal.

* *Gulielmi Pisonis medici Amstelædamensis de Indiæ utriusque re naturali et medica libri quatuordecim. Amstelædami: apud Elzevirios, 1658.* Some of Pifo's assertions concerning the rattle-snake are very extravagant. Such are the following: "Caudæ extremitate in anum hominis immissa, mortem infert confestim; venenum autem quod ore vel dentibus infundit, multo lentius vitam tollit." p. 275.

I think,

I think, I have somewhere either heard or read that the tale was credited by the late Dr. Samuel Johnson. If I am mistaken, I hope the admirers of this great man, should any of them read my memoir, will pardon me. It is certain, notwithstanding the vast strength and the rich fertility of Johnson's mind, that he was credulous and timid. Did this union of credulity and timidity arise out of that unhappy melancholy ("those casual eclipses which darken learning"), that often overclouded the brightness of his mind*? We are told that the Hercules of English literature believed in ghosts, and in the second-sight. The man who would thus suffer his mind to be estranged from probability, and entangled in difficulties, would, perhaps, find it easy to bend to the belief, that serpents have the faculty of fascinating other animals.

Although I profess myself to be a warm admirer of Linnæus, and although, at a very early period of my life, I enlisted myself under the banner of his school, I shall not, nevertheless, attempt to conceal, that this great man gave credit to the tale of the fascination of birds and other animals by serpents. In his *Systema Naturæ* (that immortal work), under the article *Crotalus horridus*, or the rattle-snake, he has the following words: "*Aves Sciurosq; ex arboribus in fauces revocat.*"† In another work, he speaks as follows. "Whoever is wounded by the Hooded Serpent (*Coluber Naja*) expires in a few minutes; nor can he escape with life who is bitten by the

* Or, did his melancholy grow out of his credulity and fear?

† See volume first, p. 372. Vienna edition of 1767. Professor Gmelin, in his edition of the *Systema Naturæ*, when speaking of the rattle-snake, has the following words, viz. "*aves sciurique ex arboribus non raro in fauces inbiantis apertas incidunt,*" tom. i. pars iii. p. 1080. The same laborious author speaking of our grey-squirrel (*Sciurus cinereus*) says, "*a crotalo comeditur,*" tom. i. p. 147. This is true: but he might have said the same when speaking of the striped-dormouse, or ground-squirrel (*Sciurus striatus*), of our rabbit (*Lepus americanus*), and many other animals.

Rattle-snake (*Crotalus horridus*) in any part near a great vein. But the merciful God has distinguished these pests by peculiar signs, and has created them most inveterate enemies; for as he has appointed cats to destroy mice, so has he provided the Ichneumon (*Viverra Ichneumon*) against the former serpent, and the Hog to persecute the latter. He has moreover given the *Crotalus* a very slow motion, and has annexed a kind of rattle to its tail, by the motion of which it gives notice of its approach: but, lest this slowness should be too great a disadvantage to the animal itself, he has favoured it with a certain power of fascinating squirrels from high trees, and birds from the air into its throat, in the same manner as flies are precipitated into the jaws of the lazy toad.”*

Linnæus was, certainly, extremely credulous, though I do not find that any of his professed biographers have taken notice of this feature of his mind. But the proofs of my observation are numerous: they are to be found in almost every essay that he has written. His credulity with respect to the powers of medicines is, perhaps, peculiarly striking†. How far this credulity, in a mind otherwise truly great (a mind which with respect to the arrangement of natural bodies has never been equalled), is to be sought for in the general character of the country which gave Linnæus birth, I shall not pause to inquire. Yet in an investigation of this kind, where the opinion of the Swedish Pliny is necessarily mentioned, it might be

* See Reflections on the Study of Nature, translated from the Latin of Linnæus. p. 33 & 34. Dublin edition, 1786. Dr. I. E. Smith, the ingenious translator of this dissertation, in a note to the above passage, has the following words. “This opinion of the fascinating power of the Toad has been refuted, and the appearance which gave rise to it fully accounted for, by Mr. Pennant, in his British Zoology. Probably the story of the Rattle-snake’s having a similar power might be found equally false, if enquired into with the same degree of accuracy.” p. 34.

† See his *Materia Medica*, liber. i. de Plantis, &c. Amstelædami: 1749.

curious to look to the sources of his credulity. The study of nature, as it respects this globe, is, perhaps, of all the sciences, the most unfavourable to superstition, or credulity. But the greatest of naturalists was one of the most credulous of philosophers.

It is proper, however, to observe, in this place, that Linnæus by no means asserts, that he himself had ever been a witness to the fascinating power of any of the serpent-tribe. He seems to have received the tale from some of his many pupils, whom he animated with the love of natural history. It is probable that Kalm, whom Linnæus quotes upon various occasions, and whom he could not but esteem, principally contributed to fix his illustrious master's credulity in this respect: for, in different parts of his *Travels*, this industrious author has given his decided assent to the tale; and he informs us, that he has treated of the same subject, more fully, in a treatise which is printed in the *Memoirs of the Royal Swedish Academy of Sciences*, for the year 1753*.

Kalm is candid enough to tell us, that he never saw an instance of the fascinating power of the serpent-kind. "However," says he, "I have a list of more than twenty persons, among which are some of the most creditable people, who have all unanimously, though living far distant from each other, asserted the same thing†." He then goes on to tell us a long story, similar to that which I have related, in the beginning of this memoir, and which, therefore, it is not necessary to repeat, in this place.

Our author is not content to make mere mention of the fact: he undertakes to speculate upon it. And here, although a talent for ingenious reasoning is, certainly,

* *Travels into North-America*, &c. vol. i. p. 318 & 319.

† *Ibid.* vol. ii. p. 207 & 208.

not the most striking feature that is displayed in the *Travels* of Kalm, he acquits himself, for some time, very judiciously; but spoils all he has said, by concluding, that the bird or squirrel “are only *enchanted*, whilst the snake has its eyes fixed on them*.” He allows that “this looks odd and unaccountable, though,” says he, “many of the worthiest and most reputable people have related it, and though it is so universally believed here,” that is in New-Jersey, &c. “that to doubt it would be to expose one’s self to general laughter.†”

Several American writers have adopted the notion, that snakes are endued with a fascinating faculty. Fearful that their authority may extend the empire of this error, I have been the more anxious to offer my sentiments on the subject to the society ‡.

It has given me pleasure to find, that the enchanting faculty of the rattle-snake is doubted by some very respectable European naturalists. “It is difficult,” says my excellent friend Mr. Pennant, “to speak of its fascinating powers: authors § of credit describe the effects. Birds have been seen to drop into its mouth, squirrels

* *Travels into North-America*, &c. vol. ii. p. 210.

† *Ibid.*

‡ Speaking of the rattle-snake, my worthy friend Mr. William Bartram says: “They are supposed to have the power of fascination in an eminent degree, so as to inthrall their prey. It is generally believed that they charm birds, rabbits, squirrels, and other animals, and by steadfastly looking at them, possess them with infatuation; be the cause what it may, the miserable creatures undoubtedly strive by every possible means to escape, but alas! their endeavours are in vain, they at last lose the power of resistance, and flutter or move slowly, but reluctantly towards the yawning jaws of their devourers, and creep into their mouths, or lay down and suffer themselves to be taken and swallowed.” *Travels through North and South Carolina, Georgia, East and West Florida*, &c. p. 267. Philadelphia: 1791.

§ “Lawson—Catesby—Ph. Tr. abridg. ix. 56, &c. vii. 410.—Brickel’s Hist. Carolina, 144.—Beverley Virginia, 260.—Colden, i. 12.” Dr. Brickel is an author of no credit. His *History of North-Carolina*, here quoted, is one of the most daring and scandalous instances of plagiarism I am acquainted with.

descend from their trees, and leverets run into its jaws. Terror and amazement seem to lay hold on these little animals: they make violent efforts to get away, still keeping their eyes fixed on those of the snake; at length, wearied with their movements, and frightened out of all capacity of knowing the course they ought to take, become at length the prey of the expecting devourer, probably in their last convulsive motion.”*

My friend Mr. de la Cépède, one of the most eloquent naturalists of the age, has devoted a good deal of attention to the subject, in his *Histoire Naturelle des Serpens*, a work of extensive and superior merit. I regret, however, that this ingenious author was not in possession of a few facts, well known in this country, which could not have failed to conduct a mind, like his, strengthened by the enlarged contemplation of the objects of nature, to the fulness and certainty of truth. As it is, however, Mr. de la Cépède deserves our thanks for reviving, and giving a new turn to, the speculations of naturalists on this subject.

I beg leave, in this place, to quote that part of Mr. de la Cépède's work which relates to the question of my memoir.

Speaking of the boiquira, or rattle-snake, my ingenious friend has the following words: “ His infectious breath, which sometimes agitates the little animals he is about to seize, may also prevent their escape. The Indians relate, that a rattle-snake is often seen, curled round a tree, darting terrible glances at a squirrel, which after expressing its fear by its cries and its tremour, falls at the foot of the tree, where it is devoured. Mr. Vosmaër (at the Hague), who has made several experiments on the bite of a rattle-snake, which he had alive, says that

* Arctic Zoology, vol. ii. p. 338. London: 1792.

the birds and mice, which were thrown into the cage, would immediately endeavour to squat in a corner, and that soon after, as if seized with deadly anguish, they would run towards their enemy, who continually shook his rattles: but this effect of a mephitick and fetid breath has been so much exaggerated, and misrepresented, that it becomes miraculous.

“It has been said,” continues our author, “that the rattle-snake had a faculty of enchanting, as it were, the animal he intended to devour; that by the power of his glance, he could oblige the victim to approach by small degrees, and finally to fall into his mouth; that even man could not resist the magick force of his sparkling eyes; and that under violent agitations he would expose himself to the envenomed tooth of the serpent, instead of endeavouring to escape. If the rattle-snake had been more generally known, and if his natural history had engaged more attention, other circumstances, still more extraordinary, would have been added to these miraculous feats; and how many fables would not have been substituted to the simple effect of a pestilential breath, which, however, has by no means been either so frequent or so fatal as some naturalists have believed!

“We may presume, with Kalm, that, for the most part, when a bird, a squirrel, or any other animal, has been seen precipitating itself from the top of a tree into the jaws of a rattle-snake, it had been already bitten*;

* I do not find that Kalm has adopted this system of explanation, in his *Travels*. On the contrary, in this work, he gives some judicious reasons for rejecting this mode of explanation. *Travels*, &c. vol. ii. p. 209 & 210. His memoir, in the *Swedish Transactions*, I have not seen. Sir Hans Sloane, a long time since, conjectured, that the whole mystery of the fascinating faculty of the rattle-snake is this, viz. “that when such animals as are the proper prey of these snakes, as small quadrupeds, birds, &c. are surprised by them, they bite them, and the poison allows them time to run a small way; or perhaps a bird to fly up into the next tree, where the snakes watch them, with great earnestness, till they fall down, or are perfectly dead, when having licked them over with their spawl or spittle, they swallow

that after escaping, it manifested, by its cries and its agitation, the violent action of the poison left in its blood, and diffused through its circulation, by the envenomed inoculation of the reptile's tooth; that, its strength gradually decaying, it would fly or leap from branch to branch, till finally exhausted it would fall before the serpent, who with inflamed eyes, and eager looks, would watch attentively every motion, and then dart on his prey, when it retained but a small portion of life. Several observations related by travellers, and particularly a fact mentioned by Kalm, appear to confirm this." *

From this long quotation, it appears that Mr. de la Cépède adopts two modes, or circumstances, for explaining the miraculous power, which has been attributed to these serpents. The explanation is, undoubtedly, in both cases, ingenious, and entitled to notice. I shall examine the question with that attention which it deserves.

In the first place, my learned friend supposes, that the rattle-snake's infectious breath †, by agitating the little animals which it means to devour, may prevent their escape.

I do not altogether understand this expression of an infectious breath. I do not think that we are in possession of any facts by which it can be proved, that the breath of the rattle-snake is, in general, more infectious, or pestiferous, than that of many other animals, whether of the same or of a different family. I know, indeed, that in some of the larger species of serpents, inhabiting South-America, and other countries, there is

low them down." *Philosophical Transactions*, vol. xxxviii. no. 433. Mr. de la Cépède does not appear to have seen Sloane's paper.

* *Histoire Naturelle des Serpens*, p. 409, 410 & 411. a Paris: 1789.

† His words are, "son haleine empestée, qui trouble quelquefois les petits animaux dont il veut se saisir, peut aussi empêcher qu'ils ne lui échappent." p. 409.

evolved in the stomach, during the long and tedious process of digestion in these animals, a vapour, or a gas, whose odour is intensely fetid. I have not, however, found that this is the case with the rattle-snake, and other North-American serpents, that I have examined. But my own observations on this head have not been very minute. I have made inquiry of some persons (whose prejudices against the serpent-tribe are not so powerful as my own), who are not afraid to put the heads and necks of the black-snake, and other serpents that are destitute of venomous fangs, into their mouths, and have been informed, that they never perceived any disagreeable smell to proceed from the breath of these animals. I have been present at the opening of a box which contained a number of living serpents; and although the box had been so close as to admit but a very small quantity of fresh air, although the observation was made in a small warm room, I did not perceive any peculiarly disagreeable effluvium to arise from the bodies of these animals. I am, moreover, informed by a member of this society*, who has, for a considerable time, had a rattle-snake under his immediate care, that he has not observed that any disagreeable vapour proceeds from this reptile. On the other hand, however, it is asserted by some creditable persons of my acquaintance, that a most offensive odour, similar to that of flesh, in the last stage of putrefaction, is continually emanating from every part of the rattle-snake, and some other species of serpents. This odour extends, under certain circumstances, to a considerable distance from the body of the animal. Mr. William Bartram assures me, that he has observed "horses to be sensible of, and greatly agitated by, it at the distance of forty or fifty yards from the snake. They showed," he says,

* Mr. Charles Wilson Peale.

"their

“ their abhorrence, by snorting, winnowing, and starting from the road, endeavouring to throw their riders, in order to make their escape.”* This fact related by a man of rigid veracity, is extremely curious; and, in an especial manner, deserves the attention of those writers, who, like M. de la Cépède, imagine that this fetid emanation from serpents is capable of affecting birds, at small distances, with a kind of asphyxy †. It even gives *some* colour of probability to the story related by Metrodorus, and preserved in the *Natural History* of Pliny ‡.

The facts which came under the notice of Mr. Vosmaër, at the Hague, are curious, and deserved to be mentioned. But they do not appear to me to be proofs of the existence of an infectious or mephitick vapour proceeding from the mouth of the rattle-snake. I am not at all surprized that the birds and mice that were put into the cage, along with this reptile, should exhibit the motions which were observed by the Dutch naturalist. When the little animals squatted down in a corner of the cage, they were, most probably, impelled by the instinct of fear, which is so powerful, and so extensive, in the vast family of animals. When they ran towards the serpent, it may have been fear that actuated them.

In conducting a series of experiments, it is ever a matter of importance, that the mind of the experimentalist should be free from the dominion of prejudice and system. Perhaps, facts are never related in all their unadulterated purity except by those, who, intent upon the discovery of truth, keep system at a distance, regardless of its claims. The strong democracy of facts should exert its wholesome sway. I cannot help thinking, that if Mr. Vosmaër had disbelieved the fascinating faculty

* MS. note communicated to me.

† Histoire Naturelle des Serpens, p. 355.

‡ Lib. xxviii. cap. 14.

of serpents, the conclusions which he would have drawn from his experiments, just mentioned, would have been somewhat different. But of this I cannot be certain, and, therefore, I shall not avail myself of the supposition.

Some experiments, which have been made in this city, do not accord with those of Mr. Vosmaër. The birds, which were put into the cage that contained the rattle-snake, flew or ran from the reptile, as though they were sensible of the danger to which they were exposed. The snake made many attempts to catch the birds, but could seldom succeed. When a dead bird was thrown into the cage, the snake devoured it immediately. He soon caught and devoured a living mole, an animal much more sluggish than the bird. A few days since, I had an opportunity of observing the following circumstance. A small bird, our snow-bird *, had been put into a cage containing a large rattle-snake. The little animal had been thus imprisoned for several hours, when I first saw it. It exhibited no signs of fear, but hopped about from the floor of the cage to its roost, and frequently flew and sat upon the snake's back. Its chirp was no ways tremulous; but perfectly natural: it ate the seeds which were put into the cage, and by its whole actions, I think, most evidently demonstrated, that its situation was not uneasy.

I do not relate this latter fact with any intention to disprove the notion, that the rattle-snake possesses the faculty of charming. For the observation was made on the seventeenth of last month, which is somewhat earlier than the time when our snakes usually come out of their dens. The snake, too, which was the subject of the experiment, appeared to be very languid, and had not

* The *Emberiza hyemalis* of Linnæus.

eaten any thing for a considerable time. We ought not therefore, to suppose him possessed of the fascinating faculty at this period ; since, I presume, that this faculty, did it exist at all, is subservient to the purpose of procuring the reptile its food. The fact is, perhaps, valuable in another point of view. It seems to show, it does show, that the mephitick vapour proceeding from the rattle-snake, allowing that such a vapour really exists, was, in no respect, injurious to the bird.

If the mephitick vapour of the rattle-snake were productive of the effects attributed to it by Mr. de la Cépède, and other writers ; and, especially, if this vapour extended its influence to animals situated at a considerable distance from the reptile, the atmosphere of the rattle-snake would often be a kind of Avernus, which many animals would avoid, and which would generally occasion the sickness or death of those that were so unfortunate as to come within its sphere. But how different is the case ! The abodes of the rattle-snake are the favourite haunts of frogs, and many species of birds, which often pass the seasons of their amours and generation in clouds of mephitism : uninjured, and undestroyed. How often has the rattle-snake been known to continue, for days, at the bottom of a tree, or even a small bush, upon the branches of which the thrush or the cat-bird are rearing their young ! This would be a suitable situation for the mephitick vapour to exert its noxious influence ; but, in our woods, such influence has never been perceived.

Birds of the eagle and the hawk kind have been seen to soar, for a considerable time, above the spot occupied by a rattle-snake, and at length to dart upon the reptile, and carry it to their young. Neither the parent-bird nor its young ones, have ever been known to receive any injury from the snake's vapour. Possibly, it may be said,

this vapour was dissipated, or greatly diluted, in passing through the air.

A mephitick, or fetid, vapour emanates from the bodies of many animals, besides the rattle-snake; from the opossum*, and the pole-cat†, for instance. The vapour of these quadrupeds would be as likely to affect birds, &c. with asphyxy, as that of the rattle-snake. And possibly it does. There is, certainly, one thing in favour of the supposition. The opossum, in particular, is noted for his cunning in catching birds.

I shall conclude this part of my memoir by observing, that the odour of the rattle-snake is said to be agreeable to some persons.

Mr. de la Cépède's second mode of explanation is much more plausible. I have already observed‡, that it was the system of Sir Hans Sloane, who affected to ground it upon experiments. It is adopted by the author of the well-written account of de la Cépède's *Natural History of Serpents*, in the *Monthly Review* §.

Mr. de la Cépède presumes that, "for the most part, when a bird, a squirrel, &c. has been seen precipitating itself from the top of a tree, into the jaws of a rattle-snake, it had been already bitten;" and that its whole conduct, such as its crying, its agitation, its leaping from branch to branch, &c. are all effects induced by the violent operation of the poison, thrown into its body, by the reptile.

An attention to facts constrains me to reject this attempt towards a solution of the question, which I am

* Didelphis Opossum.

† Viverra Putorius.

‡ See pages 30 & 31, note.

§ Appendix to the second volume of the *Monthly Review Enlarged*. p. 511.

considering.

considering. I shall arrange my chiefest objections under two heads.

First. We are pretty well acquainted with the most prominent effects produced by the poison of the rattle-snake, in various species of animals. It must be admitted, that there is a considerable variety in these effects, and a great difference in the strength of these effects. In one animal, the poison produces an high degree of inflammatory action in the system; in another, the most striking primary effect is a somnolency, or drowsiness. In one animal, the poison does not produce any obvious effect upon the system for many minutes; in another the effects are almost instantaneous*. But in almost every instance in which the poison of the rattle-snake has been successfully thrown into the body of an animal, there ensue a set of symptoms, very different from the actions of birds and squirrels when under the supposed fascinating influence of the serpent-kind. It is not necessary to detail, in this place, these various symptoms, because I have already done it in a paper which is printed in the third volume of the *Transactions* of our Society†, and because these symptoms cannot be unknown to the members of the Society. It will be sufficient to observe, that two of the most universal effects of the poison of the rattle-snake, I mean the extreme debility and the giddiness, which commonly almost immediately succeed the bite, will preclude the possibility of a squirrel's, or a bird's, dancing from branch to branch, flying about, and running to and from the serpent, for a considerable time, before it becomes a prey to its enemy. Besides, the farce of fascination is often kept up for a much longer term of

* A small dog that was bitten in the side by a large rattle-snake, reeled about, and expired, seemingly suffocated, in two minutes. This was in the month of August.

† No. xi. p. 110 & 111.

time than any small animals are known to live after a successful bite by the rattle-snake. But, perhaps, it may be said, that the rattle-snake, like some of our wasps, knows how to inject into the animal, which he means to devour, any given quantity of his subtle poison. Here, the analogy will not apply: but I have not time to point out the various instances in which its failure is conspicuous.

Kalm mentions a well-known fact, which will be admitted to have considerable weight in destroying the force of this part of Mr. de la Cépède's system. "The squirrel being upon the point of running into the snake's mouth, the spectators have not been able to let it come to that pitch, but killed the snake, and as soon as it had got a mortal blow, the squirrel or bird destined for destruction, flew away, and left off their moanful note, as if they had broke loose from a net. Some say, that if they only touched the snake, so as to draw off its attention from the squirrel; it went off quickly, not stopping till it had got to a great distance. "Why" continues our author, "do the squirrels or birds go away so suddenly and why no sooner? If they had been poisoned or bitten by the snake before, so as not to be able to get from the tree, and to be forced to approach the snake always more and more, they could however not get new strength by the snake being killed or diverted."*

Secondly. It is a fact well known in this country, that the rattle-snake is not the only kind of serpent that is said to be endued with the faculty of fascinating birds, squirrels, and other animals. As far as my inquiries have extended, it does not appear to me that, in general, the rattle-snake is thought to have so large a portion of

* Travels into North-America, &c. vol. ii. p. 209 & 210. It will be easy to discover what part of Kalm's reasoning, in the above quotation, I admit.

this faculty as some other species of serpents. Of this, at least, I am certain, that persons residing in our country-situations tell as many wonderful tales of the bewitching eyes of the black-snake, the coluber constrictor of Linnæus, as they do of the boiquira, or rattle-snake. Now let it be supposed, for a minute, that the poison of this latter serpent, when thrown into the body of a bird, a squirrel, &c. is capable of producing, in these animals, those piteous cries, those singular movements, those tremulous fears, which are mentioned by Kalm, by de la Cépède, and by other writers,—in what manner are we to account for the similar cries, movements, and fears, in those birds which are frequently seen under the fascinating influence of the black-snake? For we Americans all know, that the bite of the black-snake is perfectly innocuous. This, indeed, is also the case with the greater number of the species of serpents that have, hitherto, been discovered in the extensive country of the United States. And yet almost every species of serpents is supposed to be endued with the power of fascinating such animals as it occasionally devours.

These facts, and this mode of reasoning, certainly involve, in some difficulty, Mr. de la Cépède, and those writers who espouse his opinion, which I have examined, under the first head of my objections. An attempt is made to account for the imaginary fascinating faculty of the serpent from the powerful influence of a subtle poison. But, upon inquiry, it is found, that the power of bewitching different animals is not an exclusive gift of those serpents which nature has provided with envenomed fangs: it is a gift which as extensively belongs to that more numerous tribe of our serpents, whose bite is innocent, and whose creeping motion is their only poison*.

* If there is any impropriety in this mode of expression, the impropriety has its source in my feelings, with respect to the serpents. Perhaps,
no

These objections will, I am persuaded, be sufficient to convince every unprejudiced reader, that the system of explanation offered by Mr. de la Cépède is unfounded in facts; and, consequently, that the problem still remains to be solved, in another way.

Among the number of ingenious men who have amused themselves with speculations on the subject of this memoir, and who, rejecting the commonly received notion of the existence of a fascinating power in the rattle-snake, have attempted to explain the phenomenon upon other principles, it is with pleasure I recognise the respectable Professor Blumenbach, of Gottingen. This gentleman, in a late publication, speaking of the rattle-snake, makes a few remarks on the fascinating faculty which has been ascribed to this reptile. These remarks I shall translate at length.

“That squirrels, small birds, &c.” says he, “voluntarily fall from trees into the jaws of the rattle-snake,

no man experiences the force and the miseries of this prejudice in a greater degree than I do. It is the only prejudice which, I think, I have not strength to subdue. As the natural history of the serpents is a very curious and interesting part of the science of zoology; as the United-States afford an ample opportunity for the farther improvement of the history of these animals, and as I have, for a long time, been anxious to devote a portion of my leisure time to an investigation of their physiology, in particular, I cannot but exceedingly regret my weakness and timidity, in this respect. I had meditated a series of experiments upon the respiration, the digestion, and the generation of the serpents of Pennsylvania. But, I want the fortitude which it is necessary to possess in entering on the task. Instead of slowly and cautiously dissecting and examining their structure and their functions, with that attention which the subject merits, I am more disposed, at present, to obey the injunction of the Mantuan poet, in the following beautiful lines:

——Cape saxa manu : cape robora, pastor,
Tollentemque minas et sibila colla tumentem
Dijice : jamque fuga tumidum caput abdidit alte,
Cum medii nexus, extremæque agmina caudæ
Solvuntur, tardosque trahit sinus ultimus orbes.

GEORG. Lib. iii. 420—424.

lying

lying under them, is certainly founded in facts: nor is this much to be wondered at, as similar phænomena have been observed in other species of serpents, and even in toads, hawks, and in cats, all of which, to appearance, can under particular circumstances, entice other small animals, by mere steadfast looks. Here the rattles of this snake (the rattle-snake) are of peculiar service; for their hissing noise causes the squirrels, whether impelled by a kind of curiosity, misunderstanding, or dreadful fear, to follow it, as it would seem, of their own accord. At least," continues Mr. Blumenbach, "I know from well-informed eye witnesses, that it is one of the common practices among the younger savages to hide themselves in the woods, and by counterfeiting the hissing of the rattle-snake to allure and catch the squirrels."*

I do not intend to take up much time in examining the foregoing explanation. I shall offer my objections to it, in as concise a manner as I can.

First. The faculty of fascinating is by no means peculiar to the rattle-snake, but is attributed as extensively to the black-snake, and other serpents, which are not furnished with the crepitaculum, or set of bells †, by which this serpent is supposed to be enabled to ring for its prey, when it wants it.

Secondly. Some persons, who have seen the rattle-snake in the supposed act of charming, assure me that the reptile did not shake its rattles, but kept them still. It is true, that Mr. Vosmæer's rattle-snake, already mentioned, continually shook its rattles.

Thirdly. With regard to the practice of the young savages, spoken of by Mr. Blumenbach, I know nothing. I have inquired of Indians, and of persons who have re-

* Handbuch der Naturgeschichte, P. 253 Gœttingen: 1791.

† Serpent à sonnette is the French name for the rattle-snake.

sided, for a considerable time, among the Indians, and they appear to be as ignorant of the circumstance as I am myself. I am inclined to think that Mr. Blumenbach has been imposed upon: or, perhaps, the following circumstance may have given rise to the story. The young Indians put arrows, across, in their mouths, and by the quivering motion of their lips upon the arrows, imitate the noise of young birds, thus bringing the old ones so near to them, that they can be readily shot at. In like manner, the *Lanius Excubitor*, or great shrike, hiding itself in a thicket, and imitating the cry of a young bird, often succeeds in seizing the old ones, which have been solicited, by the counterfeited noise, to the assistance of their young.

Ever since I have been accustomed to contemplate the objects of nature with a degree of minute attention, I have considered the whole story of the enchanting faculty of the rattle-snake, and of other serpents, as destitute of a solid foundation. I have attentively listened to many stories, which have been related to me as proofs of the doctrine, by men whose veracity I could not suspect. But there is a stubborn incredulity often attached to certain minds. In me it was strong. The mere force of argument never compelled me to believe. I always suspected, that there was some deficiency in the extent of observation, and the result of not a little attention to the subject has taught me, that there is but one wonder in the business;—the wonder that the story should ever have been believed by a man of understanding, and of observation.

In conducting my inquiries into this curious subject, I thought it would be proper, and even necessary, previously to my forming a decided opinion, to ascertain the two following points, viz. first: what species of birds are most frequently observed to be enchanted by the serpents?

pents? and, secondly, at what season of the year has any particular species been most commonly seen under this wonderful influence? I was induced to believe that the solution of these two questions would serve as a clue to the investigation of what has long been considered as one of the most mysterious operations in nature. I am persuaded that I have not been mistaken. Possibly, the credulous may not think as I do.

it is a curious circumstance in the history of birds, that almost every species, in the same country at least, has an almost uniform and determinate method of building its nest, whether we consider the form of the nest, the materials of which it is constructed, or the place in which it is fixed*. Some observations on this subject are necessarily connected with the point under investigation, in this memoir:—indeed, they are involved in the question concerning the species of birds which have most generally been observed to be enchanted by the rattle-snake, &c.

Some birds build their nests on the summits of the loftiest trees; others suspend them, in a pendulous manner, at the extremity of a branch, or even on a leaf†, whilst others build them on the lower branches, among bushes, and in the hollows of decayed, and other trees.

* I do not mean, by this observation, to assert, that birds are necessarily impelled to construct their nests of the same materials, or to place them in the same situations: yet such is the language of some writers on natural history, and on morals, who talk of the “determinate instinct” of animals, and who think it impossible that “animals of the same species should any where differ.” “The grouse in America, we are told, perch upon trees; the hare burrows in the ground; and we have, in these instances, sufficient reason to deny that the species of either is the same with those of a like denomination, with which we are acquainted, in Europe.” These are the words of a late celebrated author. See Dr. A. Ferguson’s *Principles of Moral and Political Science*, vol. i. p. 59 & 60. quarto edition.

† See a very interesting account of the *Motacilla futoria*, or Taylor-bird, by my learned friend Mr. Pennant, in his *Indian Zoology*, pages 44, 45 & 46.

Many species, again, are content with the ground, laying their eggs, and hatching them, in the cavity of a stone, an excavation from the earth, among the grafs of fields and meadows, or in fields of wheat, rye, and other grains. Thus, to confine myself to our own country, the eagle, the vulture, the hawk, and other birds of this extensive family, make choice of the loftiest oaks, and other trees of our forests; the baltimore-oriole*, commonly called, in Pennsylvania, the hanging-bird, suspends a beautiful nest to the extremity of a branch of the Liriodendron†, or some other tree; the migrating thrush‡, called robin, is content with the lower branches; the red thrush||, the cat-bird§, the red-winged oriole, called the swamp-black-bird¶, and many others build in the low bushes; the wood-peckers**, the blue motacilla (blue-bird) ††, the torchepot ‡‡, and others, build in the hollows of trees, the chattering plover|||, and the whip-poor-will§§, take advantage of a hollow place in the ground, or in a stone, whilst the great lark ¶¶, the marsh-wren***, &c. place their nests in the grafs; and, lastly, the partridge ††† builds in the corn-fields.

Of all these birds, and of a great many others, those which build their nests upon the ground, on the lower branches of trees, and on low bushes (especially on the sides of rivers, creeks, and other waters, that are frequented by different kinds of serpents), have most frequently been observed to be under the enchanting faculty of the rattle-snake, &c. Indeed, the bewitching spirit of these serpents seems to be almost entirely limited to

* Oriolus Baltimore.

† Turdus migratorius.

§ Muscicapa carolinensis.

** Pici.

†† Sitta.

§§ Caprimulgus.

*** Motacilla Troglodytes?

† Liriodendron tulipifera.

|| Turdus rufus.

¶ Oriolus phœniceus.

†† Motacilla Sialis.

||| Charadrius vociferus.

¶¶ Alauda magna.

††† Tetrao virginianus.

these

these kinds of birds. Hence, we so frequently hear tales of the fascination of our cat-bird, which builds its nest in the low bushes, on the sides of creeks, and other waters, the most usual haunts of the black-snake, and other serpents. Hence, too, upon opening the stomachs of some of our serpents, if we often find that they contain birds, it is almost entirely those birds which build in the manner I have just mentioned.

This fact I had long remarked. It had made some impression upon my mind before I had turned my attention to the subject of this memoir. Lately, when I came to take a view of the subject, the fact appeared to me to be of some consequence. I shall now avail myself of it.

The rattle-snake seldom, if ever, climbs up trees*. He is frequently, however, found about their roots, especi-

* Some respectable writers assert, that the rattle-snake does climb trees, and that it does it with ease. Mr. de la Cépède is of this opinion. After telling us that this reptile lives upon worms, frogs, and hares, this naturalist proceeds: "il fait aussi sa proie d'oiseaux & d'écureuils; car il monte avec facilité sur les arbres, & s'y élance avec vivacité de branche en branche, ainsi que sur les pointes des rochers qu'il habite, & ce n'est que dans la plaine qu'il court avec difficulté, & qu'il est plus aisé d'éviter sa poursuite." *Histoire Naturelle des Serpens*. p. 409. At the conclusion of his account of the boiquira, or crotalus horridus, the eloquent author has run into the same error, in the following beautiful, though rather poetical, apostrophe. "Tranquilles habitans de nos contrées tempérées, que nous sommes plus heureux, loin de ces plages où la chaleur & l'humidité règnent avec tant de force! Nous ne voyons point un Serpent funeste infecter l'eau au milieu de laquelle il nage avec facilité; les arbres dont il parcourt les rameaux avec vitesse; la terre dont il peuple les cavernes; les bois solitaires, où il exerce le même empire que le tigre dans ses déserts brûlans, and dont l'obscurité livre plus sûrement sa proie à sa morsure. Ne regrettons pas les beautés naturelles de ces climats plus chauds que le nôtre, leurs arbres plus touffus, leurs feuillages plus agréables, leurs fleurs plus suaves, plus belles: ces fleurs, ces feuillages, ces arbres cachent la demeure du Serpent à sonnette." *Histoire Naturelle des Serpens*. p. 419 & 420. I have been at some pains to discover whether the rattle-snake does climb up trees. The result of my inquiries is that it does not. Although I have had opportunities of seeing great numbers of rattle snakes in the western parts of Pennsylvania, &c. particularly in the vicinity of the river Ohio, I never saw one of them except

ally in wet situations. It is said that this reptile is often seen, curled round a tree, darting terrible glances at a squirrel, which after some time is so much influenced by these glances, or by some subtle emanation from the body of the serpent, that the poor animal falls into the jaws of its enemy. This story is, I believe, destitute of foundation, though it is related by the good Cotton Mather*. The rattle-snake is, indeed, sometimes seen at the root of a tree, upon the lower branches of which, at the height of a few feet from the ground, a bird or squirrel has been seen exhibiting symptoms of fear and distress. Is this a matter of any wonder? Nature has taught different animals what animals are their enemies; and although, as will be afterwards shewn, the principal food of the rattle-snake is the great frog, yet as he occasionally devours birds and squirrels, to these animals he must necessarily be an object of fear. When the reptile, therefore, lies at the foot of a tree, the bird or the squirrel will feel itself uneasy. That it will sometimes run

on the ground. The black-snake I have often seen upon trees. I ought not, however, to conceal that in the summer of the last year, a Choktah-Indian told me, that the rattle-snake does climb trees and bushes, *to a small height*. He said, that he had once seen one of these snakes upon a reed. I am not very willing to deny this Indian's story: yet it is opposed to every information I have been able to procure from persons well acquainted with the reptile of which I am speaking. However, it is not impossible that where trees and bushes grow very close together, the snake may climb them *to a very small height*. Most species of serpents move in a spiral manner: the rattle-snake moves straight on; and this is the reason why he cannot climb trees. In the quotation which I have made from Mr. de la Cépède, another mistake is involved. He speaks of the agility with which the rattle-snake moves. This is not, however, merely the mistake of Mr. de la Cépède. We find it in Piso. Speaking of this reptile, our author says: "In trivii juxta ac deviis locis cernitur, tam celeriter proreptans ut volare videatur, idque velocius per loca saxosa, quam terrestria." *De Indiæ utriusque re naturali et medica*. p. 274. Now the truth is that the rattle-snake is one of the most sluggish of all our serpents. Linnæus was well informed, when he asserted that Providence had given "the Crotalus a very slow motion." See *Reflections*, &c. quoted p. 84 of this memoir.

* Philosophical Transactions of the Royal Society, No. 339.

towards

towards the serpent, then retire, and return again, I will not deny. But that it is irresistably drawn into the jaws of the serpent, I do deny : because it is very frequently seen to drive the serpent from its hold ; because the bird or squirrel often returns, in a few minutes, to their habitations. Sometimes the bird or squirrel, in attempting to drive away the snake, approach too near to their enemy, and are bitten, or immediately devoured. But, from what will afterwards be said, it will appear that these instances are not so common as is generally imagined.

My inquiries concerning the season of the year, at which any particular species of birds has been seen under the fascinating power of a serpent, afforded me still more satisfaction. In almost every instance, I found that the supposed fascinating faculty of the serpent was exerted upon the birds at the particular season of their laying their eggs, of their hatching, or of their rearing their young, still tender, and defenceless. I now began to suspect, that the cries and fears of birds supposed to be fascinated originated in an endeavour to protect their nest or young. My inquiries have convinced me that this is the case.

I have already observed, that the rattle-snake does not climb up trees. But the black-snake and some other species of the genus coluber do. When impelled by hunger, and incapable of satisfying it by the capture of animals on the ground, they begin to glide up trees or bushes, upon which a bird has its nest. The bird is not ignorant of the serpent's object. She leaves her nest, whether it contains eggs or young ones, and endeavours to oppose the reptile's progress. In doing this, she is actuated by the strength of her instinctive attachment to her eggs, or of affection to her young. Her cry is melancholy, her motions are tremulous. She exposes herself to the most imminent danger. Sometimes, she approaches

proaches so near the reptile that he seizes her as his prey. But this is far from being universally the case. Often, she compels the serpent to leave the tree, and then returns to her nest*.

It is a well known fact, that among some species of birds, the female, at a certain period, is accustomed to compel the young ones to leave the nest; that is, when the young have acquired so much strength that they are no longer entitled to *all* her care. But they still claim some of her care. Their flights are awkward, and soon broken by fatigue. They fall to the ground, where they are frequently exposed to the attacks of the serpent, which attempts to devour them. In this situation of affairs, the mother will place herself upon a branch of a tree, or bush, in the vicinity of the serpent. She will dart upon the serpent, in order to prevent the destruction of her young: but fear, the instinct of self-preservation, will compel her to retire. She leaves the serpent, however, but for a short time, and then returns again. Oftentimes, she prevents the destruction of her young, attacking the snake, with her wing, her beak, or her claws. Should the reptile succeed in capturing the young, the mother is exposed to less danger. For, whilst engaged in swallowing them, he has neither inclination nor power to seize upon the old one. But the appetite of the serpent-tribe is great: the capacity of their stomachs is not less so. The danger of the mother is at hand, when

* Horace, though he has not, like his contemporary, Virgil, given any great proofs of his knowledge in natural history, appears to have known, full well, the anxiety of birds for the preservation of their young:

“ Ut affidens implumibus pullis avis
“ Serpentium allapsus timet.”

EPOD. I.

The author of these two fine lines, had he lived in America, the land of fascination, would, I am inclined to think, have disbelieved the whole story. They would have been a clue to light and truth on this subject.

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the young are devoured. The snake seizes upon her : and this is the catastrophe, which crowns the tale of fascination !

An attachment to our offspring is not peculiar to the human kind alone. It is an instinct which pervades the universe of animals. It is a spark of the divinity that actuates the greater number of living existences. It is a passion which, in my mind, at least, declares, in language most emphatick, the existence, the superintendence, the benevolence, of a first great cause, who regards with partial and parental, if not with equal, eyes the falling of a sparrow and the falling of an empire.

Among the greater number of the species of birds, the attachment of the parent to the young is remarkably strong. We have daily instances of this attachment among our domestick birds, and I believe, it is stronger among these birds in their wild state : for there are some reasons for suspecting, that this amiable instinct is diminished and weakened by culture*. The instances which I have already mentioned, as well as a fact, which remains to be mentioned, point out, in a striking view, the attachment of the mother-bird to her offspring. She often guards her nest, with the greatest attention, fearful of the insidious glide of the serpent. She endeavours to prevent the destruction of her eggs or young, by this enemy. When he has succeeded in obtaining them, she attacks him either alone, or calls other birds to her assistance. We ought not to be surpris'd, that sometimes she falls a victim to her affection. For it is a well known fact, that some species of birds will suffer themselves to be taken upon their nests, rather than relinquish their young, or their eggs.

* This question will be examined in my memoirs upon the force, or affections, of animals.

In the study of natural history, I am always happy to discover new instances of the wisdom of providence, and new proofs of the strong affections of animals. And for the discovery of such instances of wisdom, and such proofs of affection, the contemplation of nature is an ample field. In the instances now before us, the strength of the instinct of affection in birds is illustrated, in a striking point of view; and I cannot help observing, that I feel an high degree of pleasure in being able to do away, in some measure at least, a prejudice, not less extensive than it is unfounded, by bearing my slender testimony in favour of the existence and the powerful dominion of a benevolent principle in animals.

The following fact was communicated to me, some time since, by our president, Mr. Rittenhouse. I think, it strikingly illustrates and confirms the system which I have been endeavouring to establish. I relate it, therefore, with pleasure, and the more so, as I have no doubt, that the authority of a cautious and enlightened philosopher will greatly contribute to the destruction of a superstitious notion which disgraces the page of natural history.

Some years since, this ingenious gentleman was induced to suppose, from the peculiar melancholy cry of a red-winged-maize-thief*, that a snake was at no great distance from it, and that the bird was in distress. He threw a stone at the place from which the cry proceeded, which had the effect of driving the bird away. The poor animal, however, immediately returned to the same spot. Mr. Rittenhouse now went to the place where the bird alighted, and, to his great astonishment, he found it perched upon the back of a large black-snake,

* Commonly called, in Pennsylvania, the Swamp-Black-bird. It is the *Oriolus phœniceus* of Linnæus.

which it was pecking with its beak. At this very time, the serpent was in the act of swallowing a young bird, and from the enlarged size of the reptile's belly it was evident, that it had already swallowed two or three other young birds. After the snake was killed, the old bird flew away.

Mr. Rittenhouse says that the cry and actions of this bird had been precisely similar to those of a bird which is said to be under the fascinating influence of a serpent; and I doubt not that this very instance would, by many credulous persons, have been adduced as a proof of the existence of such a faculty. But what can be more evident than the general explanation of this case? The maize-thief builds its nest in low bushes, the bottoms of which are the usual haunts of the black-snake. The reptile found no difficulty in gliding up to the nest, from which, most probably in the absence of the mother, it had taken the young ones. Or it had seized the young ones, after they had been forced from the nest, by the mother. In either case, the mother had come to prevent them from being devoured.

We are well acquainted with the common food of the rattle-snake. It is the great-frog* of our rivers, creeks, and other waters. The snake lies insidiously in wait for his prey, at the water-edge. He employs no machinery of enchantment. He trusts to his cunning and his strength.

A very ingenious† friend of mine, who has devoted considerable attention to the natural history of the rattle-snake, and who has dissected many of them, assures me, that he never saw but one instance in which a bird was found in the stomach of this reptile, and this bird was

* *Rana ocellata* of Linnæus.

† Timothy Matlack, Esquire.

the chewink, or ground-robin*. In another instance, he saw a ground-squirrel† taken out of one of these reptiles. In every other case, so long as the food retained enough of the form to be distinguished, the stomach was found to contain the great-frog, which I have mentioned.

Another argument against the fascinating power of the serpent-tribe still remains to be considered.

It is natural to inquire, for what purpose nature has endued serpents with the supposed powers of fascinating birds, and other animals? The answer to this question is uniform. It is said, the power is given that the serpents may obtain their food. Let us examine this opinion.

Admitting the existence of this power, I should have no hesitation in believing, that its use is what is here mentioned, though, indeed, it ought not to be concealed, that snakes are supposed, by some foolish people, to have the power of charming even children. And yet, I believe, there are no instances recorded of our American snakes devouring children. If, then, nature, in the immensity of her kindness, had gifted the serpents with this wonderful power, we should, at least, expect to find that the common and principal food of these serpents was those animals, viz. birds and squirrels, upon which this influence is generally observed to be exerted. This, however, is by no means the case.

As connected with this part of my memoir, it will not be improper to observe, that all our serpents are the food of different kinds of birds. Even the rattle-snake, whose poison produces such alarming symptoms in man, and other animals, is frequently devoured by some of our stronger and more courageous birds. As far as I can

* This is the *Fringilla erythrophthalma* of Linnæus.

† The *Sciurus striatus* of Linnæus.

learn, the birds which most commonly attack and destroy this reptile, are the swallow-tailed hawk*, and the larger kinds of owls. The owl often feeds her young with this snake, whose bones are frequently found, in her nest, at considerable heights from the ground. Even a hen has been known to leave, for a minute, her affrighted chickens, and attack, with her beak, a rattle-snake, the greater part of whose body she afterwards devoured †.

The black-snake is a serpent of much more activity than the rattle-snake. The latter, as I have already said ‡, seldom, if ever, climbs up trees. But the former will sometimes ascend the loftiest trees, in pursuit of the object of his appetite. The rattle-snake, it has been just observed, subsists principally upon the large frog, which frequents the waters of our country. He has, therefore, but little occasion for activity. But the black-snake, feeding more upon birds, stands more in need of activity. He frequently glides up the trees of the forest, &c. and, commonly in the absence of the mother, devours either her eggs or her young ones. The difficulty of obtaining his prey upon the tree is sometimes very considerable, as will appear from a fact which will be related immediately. Now, if this serpent is gifted with the faculty of fascinating, why is he not content to continue at the bottom of the tree, and bring down his object? And if he can employ this machinery of fascination at his pleasure, how comes it, that he so seldom succeeds in capturing old birds? For it is a fact that when birds are

* *Falco furcatus*.

† It is commonly believed, that the rattle-snake is a very hardy animal: but this is not the case. A very small stroke on any part of its body disables it from running at all; and the slightest stroke upon the top of the head is followed by instant death. The skull-bone is remarkably thin and brittle; so much so indeed, that it is thought that a stroke from the wing of a thrush or robin would be sufficient to break it.

‡ See page 103.

found in his stomach, they are principally young birds.

I have said, that the black-snake sometimes finds great difficulty in obtaining his prey upon a tree. In support of this assertion, I could adduce many facts. But my memoir has already exceeded the limits which I originally prescribed to it. I shall content myself, therefore, with relating a solitary fact, which strikingly illustrates my position.

A black-snake was seen climbing up a tree, evidently with the view of procuring the young birds in the nest of a baltimore-bird. This bird, it has been already observed, suspends its nest at the extremity of the branch of a tree. The branch to which the bird, of which I am speaking, had affixed its nest, being very slender, the serpent found it impossible to come at the nest by crawling along it: he, therefore, took the advantage of another branch, which hung above the nest, and twisting a small portion of his tail around it, he was enabled, by stretching the remainder of his body, to reach the nest, into which he insinuated his head, and thus glutted his appetite with the young birds.

The importance of this fact, in the investigation of the subject of my memoir, appears to me to be great. An American forest is not the silent residence of a few birds. During the greater part of the spring and summer months, our woods are alive with the numerous species of resident and visitant birds. At these times, if the black-snake possesses the faculty of fascinating, it cannot be a difficult thing for him to procure his food. Yet, in the instance which I have just related, we have seen this reptile climbing up a tree, and there obliged to exert all his ingenuity to obtain his prey.

I cannot well conclude this memoir without observing, that in the investigation of the subject which it involves,
I have

I have experienced much pleasure. For to the cultivators of science, the discovery of truth must, at all times, be a source of pleasure. This pleasure will even rise to something like happiness, when, in addition to the discovery of truth, we are enabled to draw aside the veil, which, for ages, has curtained superstition and credulity. Under the influence of various species of superstition, we fall from our dignity, and are often rendered unhappy. It should be one of the principal objects of science to rear and prop the dignity of the mind, and to smooth its way to comforts, and to happiness. The ills and the infirmities of our earthly state of being are numerous enough. It is folly, if not vice, to increase them. He who seriously believes, that an hideous reptile is gifted, from the sacred source of universal life and good, with the power of fascinating birds, squirrels, and other animals, will hardly stop here. He may, and probably will, believe much more. He will not, perhaps, think himself entirely exempted from this wonderful influence. He may suppose, that the property belongs to other beings, besides the serpents; and he will, perhaps, imagine that it forms a part of a more extensive plan, the effects of which, he will assert, are prominent, and unequivocal, though its ways, he will confess, are incomprehensible to mortal minds.

HISTORIA NATURALIS NON BENE DIGESTA ABIT IN FABULAM; PRÆJUDICIA VERO ET NIMIA CREDULITAS VERITATEM, ETSI COMINUS SATIS COGNITAM, LONGISSIME ALIQUANDO PROPELLUNT.

JACOBUS THEODORUS KLEIN.

Descriptio